Dry Cleaning Sector Regulatory Update

The U.S. Environmental Protection Agency is working to reduce releases of chemicals from small businesses. This bulletin highlights pollution prevention opportunities to increase the compliance, success and competitiveness of your business. Pollution prevention strategies, which include using environmentally friendly products and practices, can reduce the risk of improper chemical management, limit your liability, save money and increase worker and customer satisfaction. Even though **perchloroethylene (PERC)** has been used for decades as the dry cleaning solvent of choice, several safer alternatives are available including water via professional wet cleaning.

The 2008 National Perchloroethylene Air Emission Standards for Dry Cleaning Facilities requires a phase-out of PERC machines co-located with residential buildings by 2020. The rule also requires all dry cleaners to implement controls on PERC emissions, including:

- Elimination of transfer machines.
- Use of leak detection equipment.
- Leak repair.
- Recordkeeping.
- For dry cleaners installed on or after Dec. 9, 1991, use of carbon absorbers and refrigerated condensers.

However, these requirements can be avoided if PERC is not used.

There were more than 21,000 dry cleaning operations in the U.S. according to the Census Bureau in 2015. While most dry cleaners only use small amounts of PERC annually, the large number of dry cleaners across the country that use PERC could have a cumulative impact on the environment.

Hazards

Exposure to PERC can impact your workers, business personnel, nearby residents and the environment when released to air, water, land or groundwater. **Health effects of PERC include:**

- Skin, eye and respiratory irritation.
- Nervous system effects such as headaches, dizziness and impaired coordination.
- Liver and kidney damage.
- Likely human carcinogen.

In addition, solvents, other chemicals, fugitive dust and lint can impact air quality if proper health and safety practices are not followed. Poor management of chemicals, some of which are hazardous, may harm our lakes, streams, groundwater and drinking water through seepage into the soil and runoff to stormwater drains. Improved management of these chemicals can also save you money.

A Success Story

All Fabric Cleaners (AFC)
Farmingville, NY

Conversion from PERC to Wet Cleaning

AFC used PERC for 15 years but wanted a healthier environment for their employees and cleaner customer garments than possible using PERC. AFC was looking for a "competitive advantage."

AFC was selected by the New York State Pollution Prevention Institute's (NYSP2I) Wet Cleaning Conversion Program, which was funded by NYSDEC and U.S. EPA Region 2 grants. The new wet cleaning system was installed in 2011 and the old PERC system was removed in 2012.

Since the conversion, quality increased and AFC reported a **93 percent reduction in send-outs, do-overs and customer claims**. More garments were cleaned in a shorter time, which resulted in a **36 percent increase in efficiency**, total **annual cost savings of $9,732**, and higher satisfaction among employees and customers.

AFC also saw:

- **A 42% reduction in electricity use.**
- **Total elimination of PERC.**
- **An 802-pound reduction in hazardous waste (100%) and a 980-pound reduction in PERC air pollution (100%).**

Best of all, AFC no longer requires a NYSDEC permit.

References and Resources:

- **CDC: Control of Exposure to PERC in Commercial Drycleaning:** www.cdc.gov/niosh/docs/hazardcontrol/hc16.html
- **EPA: P2 Resources for Business**: www.epa.gov/p2/p2-resources-business
- **Toxics Use Reduction Institute** at UMass Lowell: www.turi.org/Our_Work/Business/Small_Businesses/Dry_Cleaning

Spot Cleaning Alternatives

The perchloroethylene and **trichloroethylene (TCE)** used in textile cleaning are both listed as hazardous waste under the federal Resource Conservation and Recovery Act (RCRA). If dry cleaners stop using PERC or TCE as cleaning and spotting agents, their waste streams may not be classified as hazardous waste, and workers and consumers are not exposed to PERC or TCE while spotting or wearing garments.

Fortunately, it is possible to possible to switch to other cleaners. EPA and the California Department of Toxic Substances Control sponsored a project, conducted by the Institute for Research and Technical Assistance (IRTA), that tested, developed and demonstrated low-VOC, low-toxicity alternatives to PERC and TCE. Paint, oil and grease spotting agent alternatives proved to be as effective and less expensive than PERC and TCE. The alternative spotting agents were used in facilities that have hydrocarbon, Green Earth, carbon dioxide and water-based cleaning processes.

The California Department of Health Services Hazard Evaluation System & Information Service assisted IRTA in evaluating the toxicity of the alternative spotting agents based on their Material Safety Data Sheets. The findings indicate the alternatives are lower in toxicity than PERC or TCE spotting chemicals. This project demonstrates that there are a variety of effective cleaners that could be used as alternatives to PERC and TCE spotting agents in the textile cleaning industry. These include water-based cleaners, soy-based cleaners, glycol ethers, acetone, oxalic acid and blends of these cleaners.

Alternative Spotting Agents That Performed Effectively

Spotting Agent	Type of Material
Cold Plus	Water-Based Cleaner
Mirachem NP 2520	Water-Based Cleaner
Soy Gold 2500	Methyl Ester and Surfactants
DPM	Glycol Ether
90% Soy Gold 2500/10% Acetone	Blend
90% Soy Gold 2500/10% DPM	Blend
90% DPM/10% Acetone	Blend
Deprit Professional	Oxalic Acid Based/Non-Chlorinated Hydrocarbons

Spotting Chemicals: Alternatives to PERC and TCE in the Textile Cleaning Industry www.irta.us/reports.html

Please share your own success stories with the EPA Pollution Prevention Program. Tell us what problem or challenge your small business faced, what steps you took to overcome it and how or why it resulted in a successful outcome. Provide details like the ones you see in this bulletin that explain how your actions resulted in cost savings, operating efficiency improvements, or other measurable benefits.

If you are interested, your story could be featured in our next bulletin to serve as an example for other small businesses. For more information on how you can submit your success story, visit: www.epa.gov/p2/forms/contact-us-about-pollution-prevention.